

Work Order ID 163527

Tuesday, June 27, 2017 1:30:26 PM

163527

Page 1

Item ID: D044-662-013

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: R44 Bearpaws - Large

Start Date: 6/27/2017 Start Qty: 2.00

2

Cust Item ID:

Required Date: 7/10/2017 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan:

DAS

21

Date:

JUN 28 2017

Tooling:

Date:

QC:

DAS

9-89

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

IIN-D044-662

E

JUL 19 2017

DAS

6

9-89

100

Document Control

DOCUMENT CONTROL

0.00

100

DC

Memo

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD044-662-013

CHG 002

2

DAS

27

9-89

AUG 2 5 2017

110

Pick Kit

0.00

110

Packaging

Memo

Packaging

0.00

2

JUL 2 1 2017

DAS

6

9-89

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

Quality Control

0.06

2

DAS

27

9-89

AUG 2 5 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
100								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : ☐									

Work Order ID 163527

Tuesday, June 27, 2017 1:30:26 PM

163527

Page 2

Item ID: D044-662-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: R44 Bearpaws - Large

Start Date: 6/27/2017 Start Qty: 2.00

2

Cust Item ID:

Required Date: 7/10/2017 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: _____	0.00							
130	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D044-662-013 LOCATION: FG014								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.20							
Quality Control									

DAS
27
9-89
AUG 25 2017DAS
21
9-89
AUG 25 2017DAS
21
9-89
AUG 25 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER : _____							
Misidentified ☐	☐	Past Due								

Picklist Print

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Page 1

Work Order ID: 163527

163527

Parent Item: D044-662-013

D044-662-013

Parent Item Name: R44 Bearpaws - Large

Start Date: 6/27/2017

Required Date: 7/10/2017

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 07-01-30 JLM
IPP Rev:B As per IIN 044-662 REV D 07-03-28 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4953-1 *D4953-1* Cushion		Manufactured	No			110	Each	108.0000	4	8			DAS 6 9-89
									**				
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					st543			108					
					153229			108					
D3601-1 *D3601-1* Radius Block		Manufactured	No			110	Each	59.0000	8	16			DAS 6 9-89
									**				
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST045			59					
					156511			59					
D2529 *D2529* Washer		Manufactured	No			110	Each	267.0000	8	16			DAS 6 9-89
									**				
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST008			267					
					160151			67					
					160670			200					
D3556-1 *D3556-1* R44 Bearpaw Clamp		Manufactured	No			110	Each	36.0000	4	8			DAS 6 9-89
									**				
					<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>			
					ST542			36					
					152480			16					
					162033			20					

JUL 21 2017

AUG 24 2017

JUL 21 2017

JUL 21 2017

JUL 21 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By					
				Lead hand / Supervisor Approval/Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

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Work Order ID: 163527

163527

Parent Item: D044-662-013

D044-662-013

Parent Item Name: R44 Bearpaws - Large

Start Date: 6/27/2017

Required Date: 7/10/2017

Start Qty: 2.00

Required Qty: 2.00

D3529-1 Manufactured No 110 Each 0.0000 2 4

D3529-1

Bearpaw

AN4-15A

AN4-15A

Bolt

Purchased No

110 Each

174.0000

4

8

**

B162913

DAS 6 9-89

JUL 21 2017

DAS 6 9-89

Location

Loc Qty

Loc Code

GA 10
120449 10
over003 100
m137820 100
ST343 64
m137587 64

JUL 21 2017

DAS 6 9-89

NAS1149D0463J

Purchased No

110 Each

3,541.000

8

16

**

NAS1149D0463.I

Washer

Location

Loc Qty

Loc Code

GA 40
M135056 40
ST260a 2000
M137699 2000
ST263 1501
M137371 1501

JUL 21 2017

DAS 6 9-89

DAS 6 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

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Work Order ID: 163527

163527

Parent Item: D044-662-013

D044-662-013

Parent Item Name: R44 Bearpaws - Large

Start Date: 6/27/2017

Required Date: 7/10/2017

Start Qty: 2.00

Required Qty: 2.00

AN4-14A

Purchased

No

110

Each

304.0000

4

8

AN4-14A

Bolt

**

DAS
6
9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

5

122141

5

over003

200

M136554

0

M137495

100

M137886

100

ST344

99

M137544

99

8

JUL 21 2017

MS21042L4

Purchased

No

110

Each

2,041.000

8

16

MS21042L4

Nut

**

DAS
6
9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

10

m133363

10

GA

51

m135058

51

OVER007

1400

m137402

400

m137680

1000

ST303

580

m137544

580

16

JUL 21 2017

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Shop Packet Print

Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
[Faint text: 2011 01]				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 163527***163527***

Page 1

Tuesday, June 27, 2017 1:30:26 PM

Item ID: D044-662-013 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: R44 Bearpaws - Large
Start Date: 6/27/2017 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 7/10/2017 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: _____ Date: JUN 28 2017 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
IIN-D044-662	E								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc. Control -USB or Paperwork	Photocopy bluefile & type labels per PPPD044-662-013		CHG 002						
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.06							
Quality Control									

JUL 19 2017

DAS
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9-89

JUL 20 2017



Transport Canada Transports Canada

Department of Transport

Supplemental Type Certificate

This approval is issued to:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, Ontario
Canada K6A 1K7

Number: SH02-8

Issue No.: 2

Approval Date: February 11, 2002

Issue Date: March 22, 2007

Responsible Office:

Ontario

Aircraft/Engine Type or Model:

ROBINSON R44, R44 II

Canadian Type Certificate or Equivalent:

H-97

Description of Type Design Change:

Bearpaw Installation

**Installation/Operating Data,
Required Equipment and Limitations:**

Manufacture of the Bearpaw Installation must be in accordance with Dart Aerospace Ltd. MDL-D044-662, Revision A, Transport Canada (TCCA) approved 07.02.28, or later TCCA approved revisions.

Installation of the Bearpaw Installation must be in accordance with Dart Aerospace Ltd. IIN-D044-662, Revision D, TCCA approved 07.02.14, or later TCCA approved revisions.

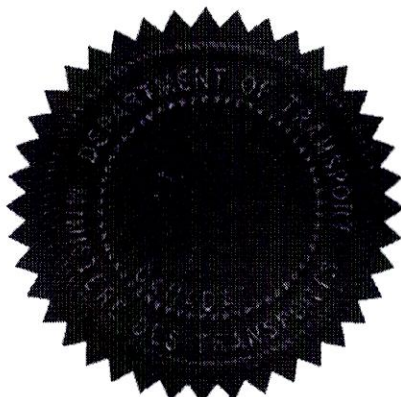
Maintenance of the Bearpaw Installation must be in accordance with Dart Aerospace Ltd. ICA-D044-662, Revision 1, dated 07.02.14, or later TCCA accepted revisions.

Basis of Certification:

The basis of certification for this modification was FAR 27, up to and including Amendment 27-40.

— End —

Conditions: This approval is only applicable to the type/model of aeronautical product specified therein. Prior to incorporating this modification, the installer shall establish that the interrelationship between this change and any other modification(s) incorporated **will not** adversely affect the airworthiness of the modified product.




M.G. Mariotti
For Minister of Transport

Canada

4.0 WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D044-662-011 Bearpaw Installation	4.6 lb 2.10 kg	0.0 in 0.0 m	0.0 in-lb 0.0 m-kg	128.1 in 3.25 m	589 in-lb 6.8 m-kg
D044-662-013 Bearpaw Installation	6.2 lb 2.81 kg	0.0 in 0.0 m	0.0 in-lb 0.0 m-kg	129.1 in 3.28 m	800 in-lb 9.2 m-kg
D044-662-041 Wearplate Kit (installed on D044-662-011/-013 Bearpaw Kit)*	1.6 lb 0.73 kg	0.0 in 0.0 m	0.0 in-lb 0.0 m-kg	128.3 in 3.26 m	205 in-lb 2.4 m-kg

*D044-662-041 weight and balance should be added to D044-662-011/-013 kits

5.0 PARTS LIST

Qty -011	Qty -013	Qty -041	Part Number	Description
X			D044-662-011	BEARPAW INSTALLATION
	X		D044-662-013	BEARPAW INSTALLATION
		X	D044-662-041	WEARPLATE KIT
		4	D2274	Radius Block
8	8	4	D2529	Washer
2			D3075-1	Bearpaw
	2		D3529-1	Bearpaw
4	4		D3556-1	Clamp
		4	D3565-1	Wearplate
8	8		D3601-1	Radius Block
4	4		D4953-1	Cushion (Replaces D2182B045 Cushion)
		4	AN4-12A	Bolt
4	4		AN4-14A	Bolt
4	4		AN4-15A	Bolt
		4	AN4-16A	Bolt
8	8		NAS1149D0463J	Washer (Replaces AN960JD416 Washer)
8	8	4	MS21042L4	Nut (or MS21042-4)